

U.S. Serial Number: 10/678,690  
Reply to Office Action of: June 27, 2006  
Family Number: P2002J100

RECEIVED  
CENTRAL FAX CENTER

SEP 20 2006

Page 13 of 21

**REMARKS**

Applicants thank the Examiner for the interview of September 11, 2006.  
The contents of the interview are summarized by the remarks below.

Claim 1 is amended to incorporate the subject matter of claim 7.

Claims 16 and 48 are amended to incorporate subject matter similar to  
claim 26.

Claim 56 is amended to incorporate the subject matter of claim 63.

Claim 9 is canceled, per the Examiner's suggestion.

Claims 7, 8, 26, 63 and 64 are canceled for consistency with the above  
amendments.

Claim 27 is amended for consistency with the above amendments.

Claims 45 - 47 are amended to correct their dependency.

Claim 38 is amended to clarify the claim language.

The above amendments introduce no new matter.

The claims submitted for reconsideration are claims 1 - 6, 10 - 25, 27 -  
62, and 65 - 69.

U.S. Serial Number: 10/678,690  
Reply to Office Action of: June 27, 2006  
Family Number: P2002J100

Page 14 of 21

**I. Rejections under 35 U.S.C. §103 – WO/01/07538 (Duprey)**

**Duprey and LaPierre**

The rejection of claims 1 - 6, 10 -12, 14 - 23, 27 - 34, 36 - 44, 46, 47, 49 - 52, 54 - 62, and 65 - 68 under 35 U.S.C. §103(a) over WO/01/07538 (Duprey) in view of US 4,431,519 (LaPierre) is respectfully traversed. The cited references fail to provide a proper prima facie case of obviousness due to a lack of motivation to combine the references. Alternatively, attempting to combine Duprey and LaPierre is improper because the combination would render Duprey unsuitable for its intended purpose. Additionally, even if the references could be combined, the resulting combination would not result in the claimed invention.

Duprey describes a process for preparing a lubricating base oil from a Fischer Tropsch synthetic waxy feed. On page 3, Duprey notes that the Fischer Tropsch process for synthesizing the waxy feed results in water and oxygenates (such as alcohols) being present in the feed. Duprey then states that "The Fischer-Tropsch product, including the wax, may have been subjected to a hydrotreatment process step in order to lower the content of these unsaturated or oxygenated product. These compounds may cause a deactivation of certain catalysts used in further downstream treatment of the Fischer-Tropsch product." (Duprey, Pg 3, last two full sentences.) This concern is repeated on page 5, where Duprey states that the invention is directed to a process that optionally includes hydrotreating the Fischer-Tropsch product to reduce the amount of unsaturated and oxygenated products. Additionally, in Example 4, where a Fischer-Tropsch wax is processed according to the invention, Duprey states that the Fischer-Tropsch wax is hydrotreated to reduce the oxygen content to below 500 ppmw as molecular oxygen. This same hydrotreated wax is also used in Examples 5 and 6. In combination, the above statements make it clear that Duprey explicitly teaches

U.S. Serial Number: 10/678,690  
Reply to Office Action of: June 27, 2006  
Family Number: P2002J100

Page 15 of 21

that oxygenate content poses a problem in processing of Fischer-Tropsch waxes, and that increased levels of oxygenate would be detrimental to the process described in Duprey.

The Office Action states that one of skill in the art would be motivated to modify Duprey by contacting the dewaxing catalyst with oxygenate as suggested by LaPierre. In LaPierre, an oxygenate such as methanol is combined with the feedstock so that the resulting feed contains between roughly 10 and 90% oxygenate by weight. (LaPierre, Col. 3, lines 25 - 29) This is in direct contrast to the explicit teaching of Duprey, which states that oxygenates may need to be removed from the feedstock to avoid damaging catalysts used to treat the feedstock. In particular, the minimum oxygenate addition of 100,000 wppm taught in LaPierre is significantly above the maximum desired oxygenate level of 500 wppm taught in Duprey. Given the various explicit teachings in Duprey regarding the need to maintain low the concentrations of oxygenates in the feedstock, there is no possible motivation for one of skill in the art to increase the oxygenate concentration in the feedstock to 10% or more by weight. As a result, there is no motivation to combine the Duprey and LaPierre references.

Even if Duprey and LaPierre could somehow be combined, one would still not arrive at the claimed invention. LaPierre suggests adding 10% by weight or more of oxygenate to a feedstock. This corresponds to 100,000 wppm or more. By contrast, the claimed invention is limited to oxygenate amounts between 100 and 10,000 wppm. In addition to failing to describe the range of oxygenate of the claimed invention, there is no motivation to modify LaPierre to reduce the level of oxygenate by an order of magnitude or more to arrive at the claimed invention. In LaPierre, the stated rationale for adding oxygenate is to add heat to the reaction bed. Without commenting on the merits of this rationale, reducing the amount of oxygenate to the lower levels of the claimed invention would not make sense, as

U.S. Serial Number: 10/678,690  
Reply to Office Action of: June 27, 2006  
Family Number: P2002J100

Page 16 of 21

the lower oxygenate levels of the claimed invention would not be effective for heating the reaction bed. Note that this combination would also render Duprey unsuitable for its intended purpose. Given the explicit teaching in Duprey that high oxygenate levels will harm later processing steps for the Fischer-Tropsch wax, adding the level of oxygenate suggested in LaPierre would impair the ability to further process the Fischer-Tropsch wax.

Based on the above, reconsideration and withdrawal of the rejection of claims 1 - 6, 10 - 12, 14 - 23, 27 - 34, 36 - 44, 46, 47, 49 - 52, 54 - 62, and 65 - 68 is respectfully requested. As shown, there is no motivation to combine Duprey and LaPierre, as the teachings of the references with regard to oxygenate content are in direct conflict and cannot be reconciled.

#### Duprey and Shihabi

The rejection of claims 1 - 6, 10 - 12, 14 - 22, 24, 27, 48 - 49, 56 - 62, and 66 - 68 under 35 U.S.C. §103(a) over Duprey in view of GB 2,109,402 (Shihabi) is also respectfully traversed. The cited references fail to provide a proper prima facie case of obviousness due to a lack of motivation to combine the references, and/or the fact that the proposed combination of references would render Duprey unsuitable for its intended purpose. Additionally, even if Duprey and Shihabi could be combined, the combination would not result in the claimed invention, as Shihabi is directed to activation of catalysts that operate by cracking, not isomerization.

As described above, Duprey explicitly teaches that increased oxygenate content is undesirable. In Example 4, Duprey notes that the Fischer-Tropsch wax to be processed according to the invention is hydrotreated to reduce the oxygenate content to 500 ppmw or less.

U.S. Serial Number: 10/678,690  
Reply to Office Action of: June 27, 2006  
Family Number: P2002J100

Page 17 of 21

Shihabi describes a method for maintaining the activity of zeolite catalysts used in reactions with hydrocarbon feedstocks. In Shihabi, water or a water precursor such as alcohol is co-fed to the reaction zone where hydrocarbons are introduced to catalyst. Shihabi describes that the amount of water and/or water precursor added should be 0.1 to 20 volume percent of the feedstock (1000 vppm to 200,000 vppm), and preferably 1 to 10 volume percent. (Shihabi, pg 4, lines 22 - 31) Additionally, in the example Shihabi describes addition of 5 volume percent of water (50,000 ppmw).

Although Shihabi expresses quantities in vppm, the vppm values should be less than a factor of 2 different than wppm values. Thus, the minimum suggested addition of water or water precursor in Shihabi is greater than 500 wppm. By contrast, Duprey explicitly teaches the desirability of reducing the oxygenate content in a Fischer-Tropsch wax to below 500 wppm. There is no overlap between the amount of water addition suggested by Shihabi and the maximum suggested water level in Duprey. As a result, there can be no motivation to combine these references. In the alternative, any attempt to incorporate the water or water precursor addition of Shihabi into Duprey will render Duprey unsatisfactory for its intended purpose. Given the explicit teaching in Duprey that high oxygenate levels will harm later processing steps for the Fischer-Tropsch wax, adding the level of oxygenate suggested in LaPierre would impair the ability to further process the Fischer-Tropsch wax. For at least these reasons, reconsideration and withdrawal of the rejection of claims 1 - 6, 10 - 12, 14 - 22, 24, 27, 48 - 49, 56 - 62, and 66 - 68 is respectfully requested.

Duprey, LaPierre/Shihabi, and Dougherty

The rejection of claims 13, 25, 35, 38 - 47, 53, and 65 under 35 U.S.C. §103(a) over Duprey in view of either LaPierre or Shihabi and further in view of US

U.S. Serial Number: 10/678,690  
Reply to Office Action of: June 27, 2006  
Family Number: P2002J100

Page 18 of 21

6,294,077 (Dougherty) is also respectfully traversed. Dougherty describes a process for converting hydrotreated hydrocarbon lube oil feedstocks. The combination of Duprey in view of either LaPierre or Shihabi and further in view of Dougherty fails to provide a proper prima facie case of obviousness for at least the reasons described above. In particular, the combination of Duprey and either LaPierre or Shihabi is improper due to the explicit teaching in Duprey that the oxygenate content in the Fischer-Tropsch waxy feed needs to be maintained at low levels. Thus, there cannot be a motivation to add the oxygenates of LaPierre or Shihabi to the Fischer-Tropsch feed in Duprey to arrive at the claimed invention. Nothing in Dougherty overcomes this deficiency in the other references. Reconsideration and withdrawal of this rejection is requested for at least this reason.

## **II. Rejections under 35 U.S.C. §103 - WO/01/07538 (Riley)**

### **Riley and LaPierre**

The rejection of claims 1 - 6, 10 - 12, 14 - 23, 25, 27 - 34, 36 - 44, 46, 47, 49 - 52, 54 - 62, and 66 - 68 under 35 U.S.C. §103(a) over WO/99/41337 (Riley) in view of LaPierre is respectfully traversed. The combination of Riley in view of LaPierre does not describe or suggest each limitation of the claimed invention. In particular, neither Riley nor LaPierre, either alone or in combination, describes or suggests contacting a dewaxing catalyst which functions by isomerizing waxy molecules with a stream containing 100 wppm to 10000 wppm of at least one oxygenate to selectively activate the catalyst.

Riley describes a process for hydroisomerizing waxy feeds. Riley simply has no description or suggestion that the catalyst used for hydroisomerization should be contacted with oxygenate to activate the catalyst.

U.S. Serial Number: 10/678,690  
Reply to Office Action of: June 27, 2006  
Family Number: P2002J100

Page 19 of 21

The Office Action states that one of skill in the art would be motivated to modify Riley by contacting the dewaxing catalyst with oxygenate as suggested by LaPierre. In LaPierre, an oxygenate such as methanol is combined with the feedstock so that the resulting feed contains between roughly 10 and 90% oxygenate by weight. (LaPierre, Col. 3, lines 25 - 29) This corresponds to a minimum oxygenate addition level in LaPierre of 100,000 wppm. Note that this is an order of magnitude higher than the upper limit of 10,000 wppm required by the claimed invention. Thus, LaPierre does not explicitly describe the limitation required by the claimed invention.

To overcome the lack of explicit teaching, the Office Action asserts that one of skill in the art "would contact the catalyst with the oxygenate for any time and in any concentration that is effective in achieving the result of increased activity." This reasoning, however, is not a motivation to modify LaPierre to arrive at the claimed invention; it is merely a statement of desirability. In order to form a proper prima facie case of obviousness, a motivation to modify the references must be present.

In LaPierre, the stated purpose of contacting a catalyst with 10 - 90% by weight of oxygenate is to provide additional heat to the catalyst bed. This is the only motivation apparent in LaPierre for modifying the oxygenate content. Given this rationale, it is difficult to understand why one of skill in the art would be motivated to drop the level of oxygenate by an order of magnitude or more, as one would expect a similar order of magnitude drop in the amount of heat generated. As no other motivation to modify the teachings of LaPierre is apparent from the references, there is no motivation to modify LaPierre to arrive at the claimed oxygenate contact levels of 100 - 10,000 wppm. Based on the above, reconsideration and withdrawal of the rejection of claims 1 - 6, 10 - 12, 14 - 23, 25, 27 - 34, 36 - 44, 46, 47, 49 - 52, 54 - 62, and 66 - 68 is respectfully requested.

U.S. Serial Number: 10/678,690  
Reply to Office Action of: June 27, 2006  
Family Number: P2002J100

Page 20 of 21

Riley and Shihabi

The rejection of claims 1, - 6, 16 - 22, 24, 48, 56 - 62 and 66 - 68 under 35 U.S.C. §103(a) over Riley in view of Shihabi is traversed and/or rendered moot by the amendments to the claims. All of the claims as amended now contain subject matter not rejected over Riley in view of Shihabi. In particular, independent claims 28, 38, and 49 were not rejected over Riley in view of Shihabi. Additionally, claim 1 now incorporates the subject matter of claim 7 (not rejected over Riley in view of Shihabi); claim 16 incorporates the subject matter of claim 26 (not rejected); and claim 56 incorporates the subject matter of claim 63 (not rejected). Claim 48 is also amended to incorporate subject matter similar to claim 26, so claim 48 is also expected to be allowable. Reconsideration and withdrawal of the rejection is requested.

Riley, LaPierre/Shihabi, and Dougherty

The rejection of claims 13, 25, 35, 45, 53, and 65 under 35 U.S.C. §103(a) over WO/99/41337 Riley in view of LaPierre or Shihabi and further in view of Dougherty is traversed and/or rendered moot by the amendments to the claims. The combination of Riley, LaPierre, and Dougherty fails to form a proper prima facie case of obviousness for at least the reasons described above. The independent claims as amended now contain subject matter not rejected over Riley in view of Shihabi. The combination of Dougherty with Riley and Shihabi does not change the allowability of the independent claims as amended. Reconsideration and withdrawal of the rejection is requested.



U.S. Serial Number: 10/678,690  
Reply to Office Action of: June 27, 2006  
Family Number: P2002J100

RECEIVED  
GENERAL FAX CENTER

Page 21 of 21

SEP 20 2006

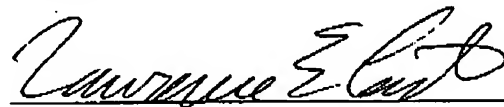
### III. Conclusion

Having demonstrated that all rejections of claims have been overcome, this application is in condition for allowance. Accordingly, applicants request early and favorable reconsideration in the form of a Notice of Allowance.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated, since this should expedite the prosecution of the application for all concerned.

If necessary to affect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to affect a timely response. Please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1330.

Respectfully submitted,



Lawrence E. Carter  
Attorney for Applicant(s)  
Registration No. 51,532  
Telephone Number: (908) 730-3632  
Facsimile Number: (908) 730-3649

☒ Pursuant to 37 CFR 1.34(a)

ExxonMobil Research and Engineering Company  
P. O. Box 900  
Annandale, New Jersey 08801-0900

9/18/06